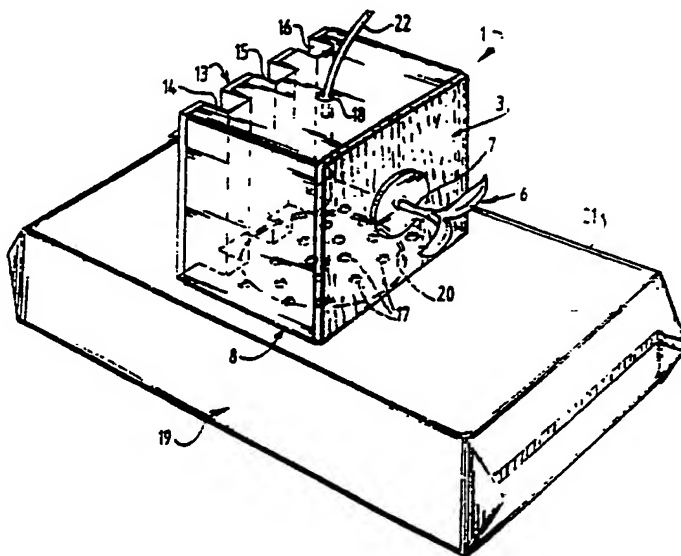




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(54) Title: PLANT POT FOR CULTIVATING PLANTS



(57) Abstract

The invention relates to plant pot (1) for cultivating plants which is in the form of a parallelepiped and made from mineral wool (2) with a top surface (3) for receiving a plant, of which the four sides adjoining the top surface are provided with a water- and lightproof material (12), wherein on at least one side surface the water- and lightproof material is provided with root holes (17), wherein preferably on a side surface remote from the side surface provided with root holes the water and lightproof material is provided with an opening for a dripper (22).

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Plant pot for cultivating plants

The present invention relates to a plant pot for cultivating plants, namely for propagating seedlings, cuttings, grafts and the like in a substrate culture.

A known plant pot is described for instance in
5 EP-A-0 176 134, whereof the content is deemed by reference to be interpolated herein.

The known plant pot can be provided with an opening in the top surface for receiving a grow plug provided with a seedling. This opening may optionally be omitted, for instance
10 in the case of a cutting which can be placed directly in the top surface of the plant pot.

The four side surfaces of the plant pot are provided with a water- and lightproof material, for example a layer of foil which can be wrapped round the plant pot or arranged as shrink
15 wrapping.

After the plant has been propagated in the plant pot, the latter is finally placed on a growing slab into which the plant roots can grow out further.

For a number of plants, such as tomatoes, after the plant
20 pot has been placed on the growing slab and the plant has reached a horizontal thread in a higher position, the plants are trained using a rope such that the plant stem first runs virtually horizontally from the plant pot and is subsequently guided inclining upward. In this way the picking height can be
25 kept substantially constant.

Because the plant stem bends horizontally, there is the danger of it touching the plant pot, particularly at the location of the side edge. Contact with the nutrient liquid and with a salt crust that may have formed results in stem burning,
30 whereby the plant may eventually die.

In order to prevent the risk of stem burning it is proposed according to the invention to tilt the plant pot such that it rests on the growing slab with one of its side surfaces that is covered by water- and lightproof material. In order to
5 ensure growth of the plant roots out of the plant pot into the growing slab, root holes therefore have to be arranged in the water- and lightproof material on this side surface which is a bottom surface during cultivation. To this end the invention provides a plant pot for cultivating plants which is in the form
10 of a parallelepiped and made from mineral wool with a top surface for receiving a plant, of which the four sides adjoining the top surface are provided with a water- and lightproof material wherein on at least one side surface the water- and lightproof material is provided with root holes.

15 It is thus possible to place the plant pot provided with a propagated plant in a tilted position on the growing slab so that the top surface of the plant pot now lies in a side surface and the plant stem grows therefrom substantially horizontally.

In order to be able to adequately provide the plant pot
20 according to the invention with nutrient liquid and water it is further recommended that on a side surface remote from the side surface provided with root holes the water- and lightproof material is provided with an opening for a dripper.

In order to facilitate handling of the plant pot during
25 propagation, large numbers of plant pots are mutually coupled by a coupling strip.

According to one embodiment of the plant pot according to the invention the side surface with root holes and/or the side surface with the dripper opening is provided with a coupling
30 strip. Here the coupling strip can initially cover the root holes and/or the dripper opening and the coupling strips have to be removed prior to use of the plant pot in its tilted position to release the root holes and/or the dripper opening. According to a variant the coupling strip can however be provided with
35 root holes and/or the dripper opening.

It is likewise possible for the coupling strips to be arranged on the side surfaces that are free of root holes and optionally the dripper opening.

If in the tilted position there is a danger of water emptying or evaporating more rapidly out of the tilted plant pot because the bottom surface is left open, use can be made of another plant pot according to the invention wherein a side surface is provided with a covering flap for covering a bottom surface of the plant pot.

A type of plant pot that is preferably used in the tilted position is that wherein the bottom surface of the plant pot is provided with at least one groove which runs out into at least one side surface. It is noted however that plant pots without a groove in the bottom surface can be used while retaining the advantages of the invention.

Mentioned and other features of the plant pot according to the invention will be elucidated hereinafter in the light of a number of embodiments given only by way of example and with reference to the annexed drawing.

In the drawing:

figure 1 is a perspective view of the plant pot according to the invention during propagation;

figure 2 is a perspective view of the plant pot of figure 1 in its tilted position on a growing slab;

figures 3A and 3B show perspective views of the plant pot of figure 1 seen from opposing positions;

figures 4 and 7 are views corresponding with figure 2 of variants; and

figures 5 and 6 show perspective views of embodiments of plant pots according to the invention which are joined by means of a coupling strip.

Figure 1 shows a plant pot 1 according to the invention. The plant pot 1 comprises a block 2 of mineral wool such as rockwool and glass wool. Arranged in the upper surface 3 is a plant hole 4 into which is placed a plug 5 of mineral wool, out of which grows the stem 7 of a plant 6.

The side surfaces 8-11 are covered with a wrapping 12 of light- and waterproof material such as a foil, for instance of polythene.

Arranged in the bottom surface 13 are grooves 14-16 which
5 run out into the side surfaces 8 and 10.

On the side surface 8 the wrapping 12 is provided with root holes 17. The wrapping 12 is provided on side surface 10 with a dripper opening 18.

Figure 2 shows the tilted position of plant pot 1 during
10 culture on a growing slab 19. The growing slab 19 is known and consists for instance of a slab of mineral wool encased on all sides in a foil of water- and lightproof material, such as polythene foil. Plant pot 1 is arranged on a plant opening 20 arranged in the foil 21. The original side surface 8 is now a
15 bottom surface, wherein plant roots can leave the plant pot 1 via the root holes 17 and after passing through the plant hole 20 can grow out into the growing slab 19. The original side surface 10 is now a top surface and into the dripper opening 18 is now inserted a dripper 22 for feeding water and optionally
20 nutrient solution.

Figure 2 shows clearly that the stem 7 of the plant 6 grows horizontally out of the original upper surface 3 which is now a side surface and that any contact with an edge is therefore avoided and therewith the danger of stem burning.

25 Figures 3A and 3B show another plant pot 23 according to the invention, wherein in this case the grooves 14-16 run out into the side surfaces where the wrapping 12 has no root holes 17 and no dripper opening 18, these being now arranged on the respective side surfaces 26 and 27.

30 Figure 4 shows a plant pot 28 according to the invention which rests with a side surface 29 on the growing slab 19. On this side surface 29 the wrapping 12 is provided with root holes 17.

On the side surface 30 lying opposite side surface 29 the
35 wrapping 12 is not provided with a dripper opening, but the

dripper 22 is inserted through the wrapping 12 into the block 2 of mineral wool.

Figure 5 shows two plant pots 31 according to the invention whereof the wrappings 12 on the side surfaces 32 are provided with root holes 17. The plant pots 31 are mutually joined by means of a coupling strip 33 provided with a paper strip provided with adhesive adhering to the wrapping 12. In this case the root holes 17 are covered by the coupling strip 33.

Figure 6 shows plant pots 34 according to the invention which are mutually connected by the coupling strip 33 while the wrapping 12 is provided on the side surface 35 with the root holes 17, which are now not covered off by the coupling strip 33.

According to another variant the coupling strip 33 is likewise provided as according to figure 5 with root holes which lie substantially opposite the root holes 17 arranged in the wrapping 12.

Finally, figure 7 shows another plant pot 36 according to the invention, wherein the wrapping 12 is provided on the original side surface 37 with root holes 17 which lie opposite the plant hole 20 of the growing slab 19. In this case the wrapping 12 is provided with a cover flap 38 which covers off the original bottom surface 13.

The cover flap can be a separate flap which is clamped under the wrapping 12 or can form part thereof and be temporarily fixed to the wrapping 12 during storage and propagation by means of a coupling strip removed thereafter.

The root holes have dimensions and are arranged in a number in the original side surface such that propagating of the plant and later cultivating on the growing slab are substantially unaffected, while the roots can nevertheless grow via the root holes out into the growing slab without cultivation being adversely affected to any considerable degree. The same is true for the optionally used dripper opening.

CLAIMS

1. Plant pot for cultivating plants which is in the form of a parallelepiped and made from mineral wool with a top surface for receiving a plant, of which the four sides adjoining the top surface are provided with a water- and lightproof material, wherein on at least one side surface the water- and lightproof material is provided with root holes.

2. Plant pot as claimed in claim 1, wherein on a side surface remote from the side surface provided with root holes the water- and lightproof material is provided with an opening for a dripper.

3. Plant pot as claimed in claim 1 or 2, wherein the side surface with root holes and/or the side surface with the dripper opening is provided with a coupling strip.

4. Plant pot as claimed in claim 3, wherein the coupling strip covers the root holes and/or the dripper opening.

5. Plant pot as claimed in claim 3, wherein the coupling strip is provided with root holes and/or the dripper opening.

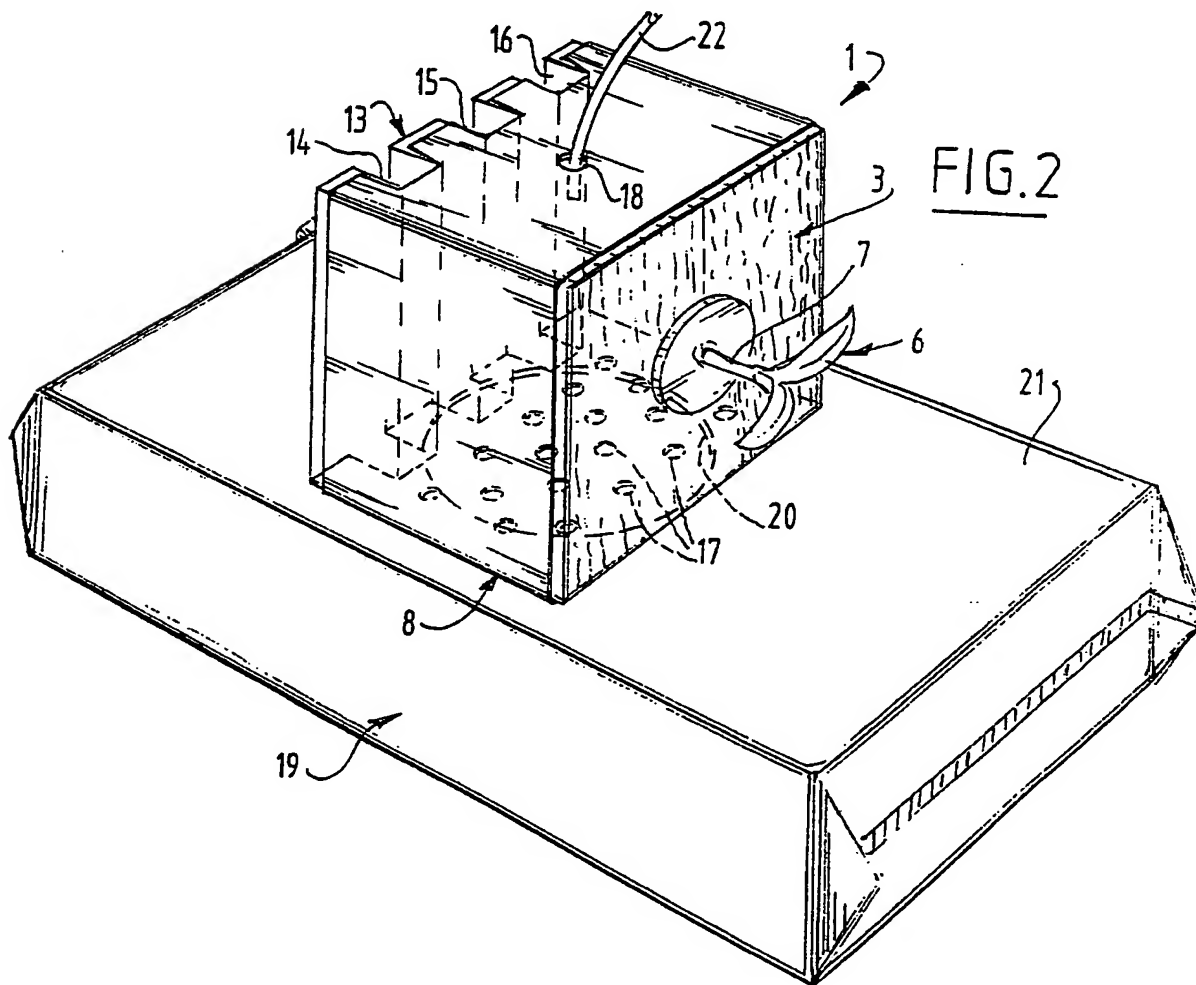
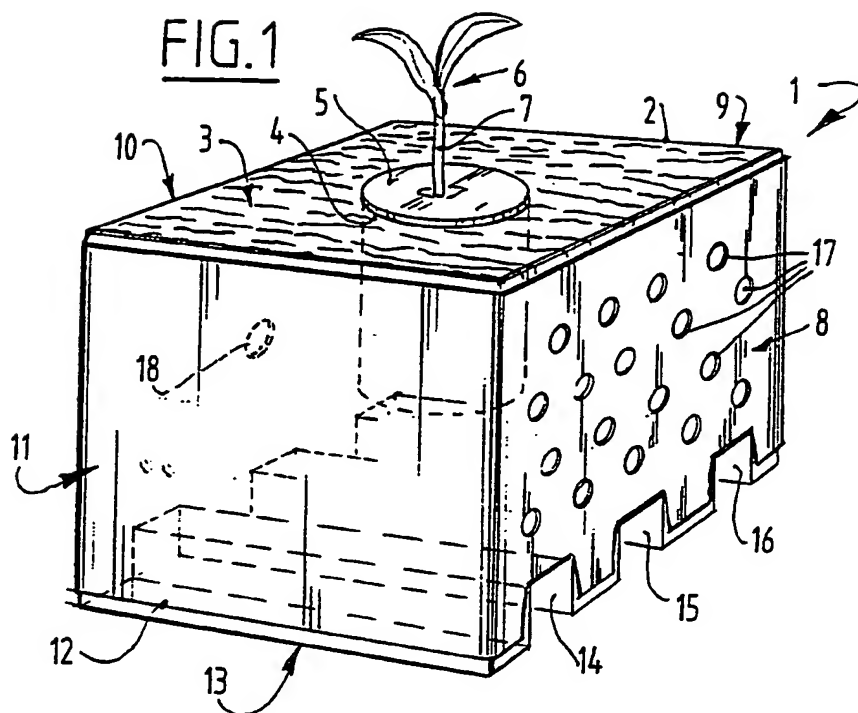
6. Plant pot as claimed in claims 1-5, wherein a side surface is provided with a cover flap for covering a bottom surface of the plant pot.

7. Plant pot as claimed in claims 1-6, wherein the bottom surface of the plant pot is provided with at least one groove which runs out into at least one side surface.

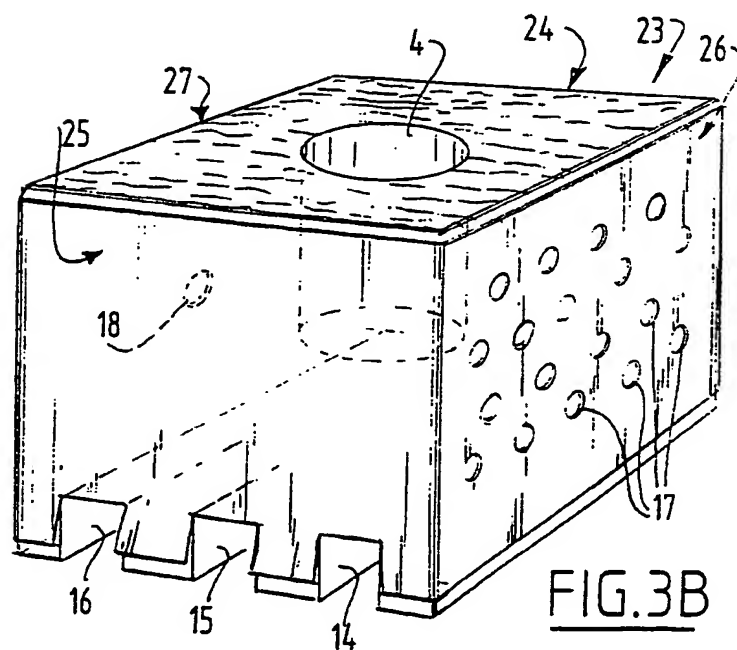
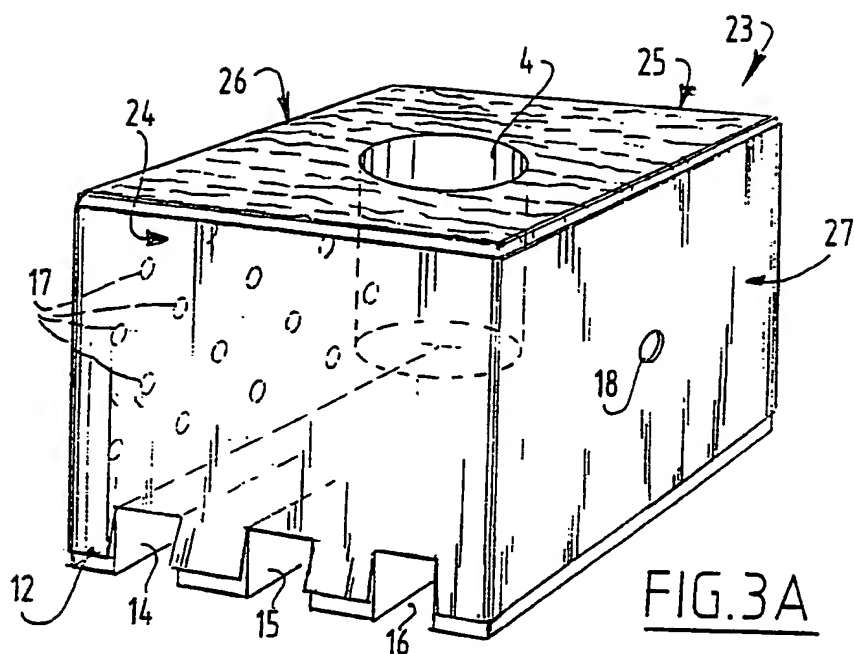
8. Method for cultivating plants using a plant pot according to any of the claims 1 to 7, wherein a plant is cultivated in a plant pot, which plant pot rests on a bottom surface, and after outgrowth the plant pot is tilted and rests on a side surface provided with root holes.

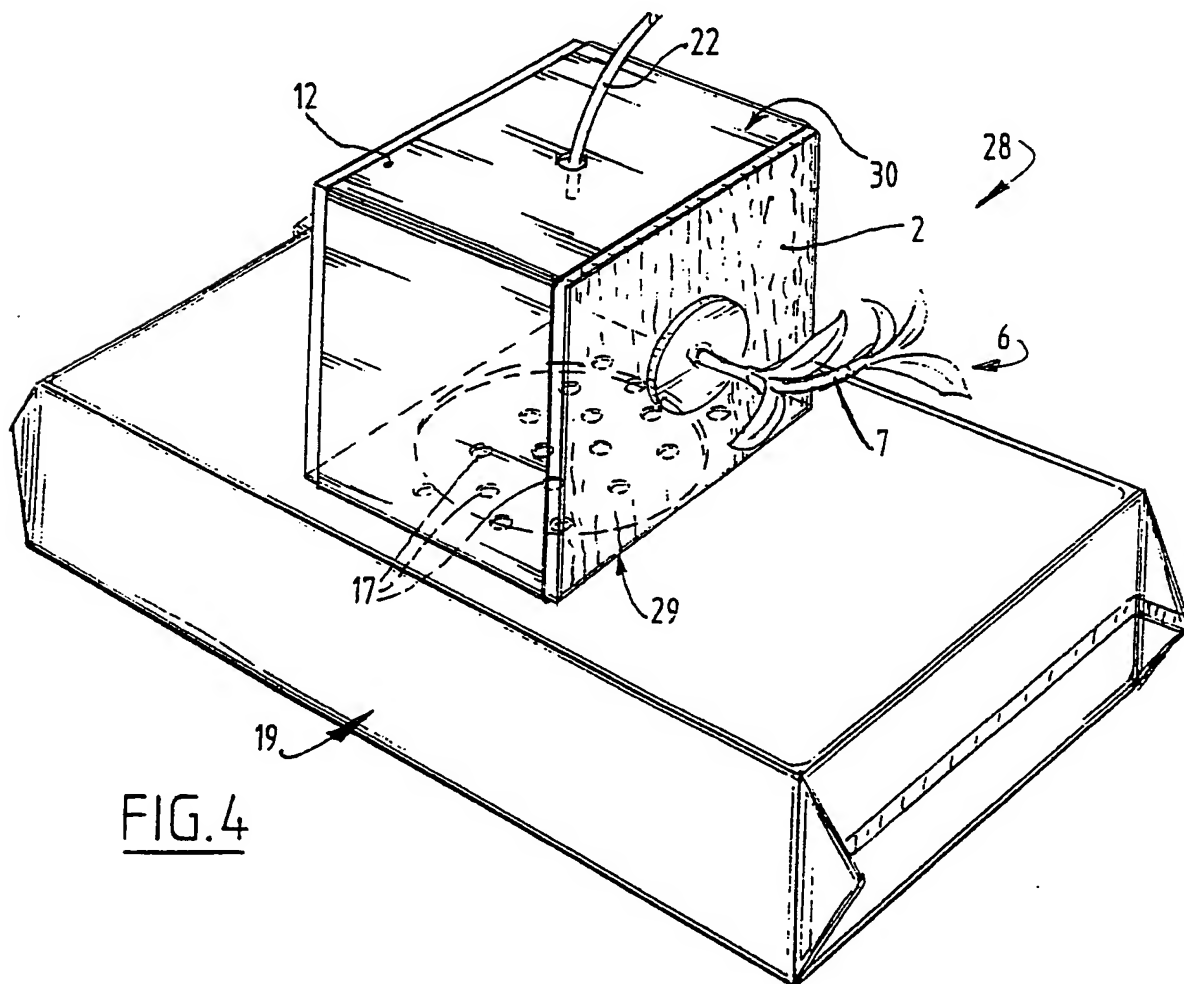
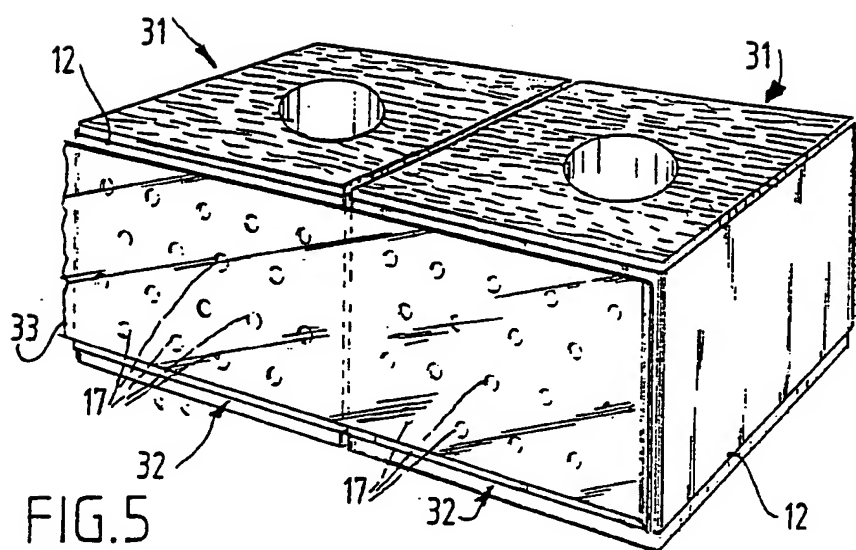
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FIG. 1

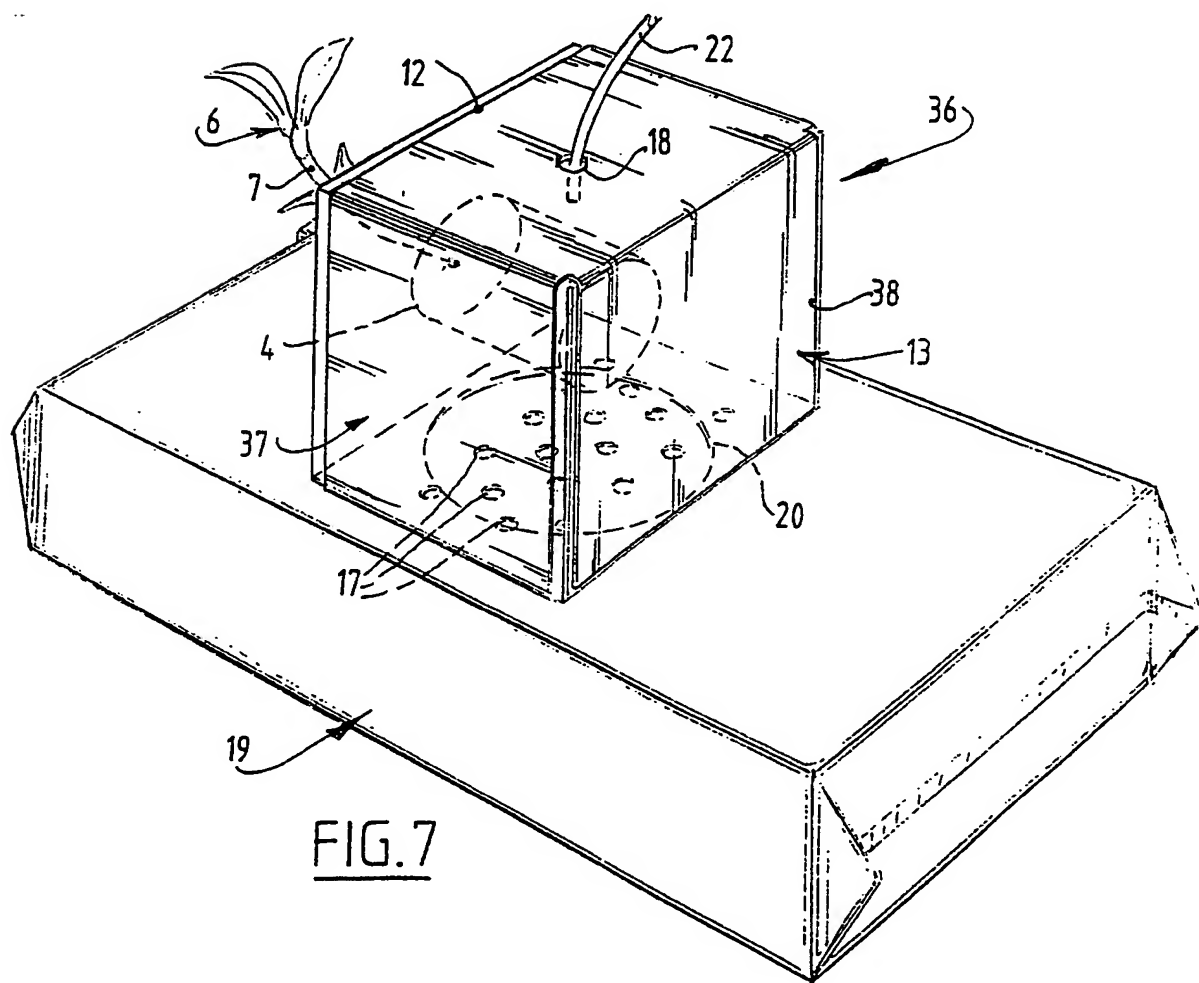
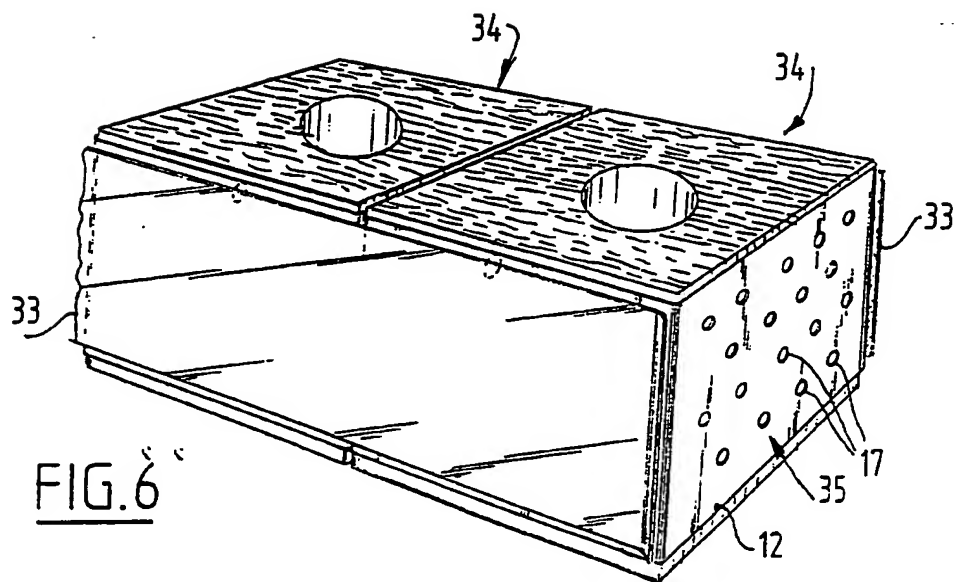


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INTERNATIONAL SEARCH REPORT

International Application No

PCT/NL 92/00017

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶ According to International Patent Classification (IPC) or to both National Classification and IPC Int.Cl. 5 A01G31/00																	
II. FIELDS SEARCHED <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black; margin: 5px 0;">Minimum Documentation Searched⁷</div> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border-bottom: 1px solid black; padding: 5px;">Classification System</td> <td style="border-bottom: 1px solid black; padding: 5px;">Classification Symbols</td> </tr> <tr> <td style="padding: 5px;">Int.Cl. 5</td> <td style="padding: 5px;">A01G</td> </tr> </table> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black; margin: 5px 0;">Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched⁸</div>			Classification System	Classification Symbols	Int.Cl. 5	A01G											
Classification System	Classification Symbols																
Int.Cl. 5	A01G																
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹ <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; border-bottom: 1px solid black; padding: 5px;">Category⁹</th> <th style="width: 70%; border-bottom: 1px solid black; padding: 5px;">Citation of Document,¹¹ with indication, where appropriate, of the relevant passages¹²</th> <th style="width: 20%; border-bottom: 1px solid black; padding: 5px;">Relevant to Claim No.¹³</th> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">EP,A,0 176 134 (VAN GORKOM) 2 April 1986 cited in the application see abstract; figure 1 ---</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1,7</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">Y</td> <td style="padding: 5px;">DE,A,2 734 357 (SKAIFE) 8 February 1979 see page 18, paragraph 2 -paragraph 3; figures 15,16 ---</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1,7</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">CH,A,261 559 (WEBER) 16 August 1949 see page 2, line 32 - line 89; figures 1-4 ---</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1,3</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">GB,A,2 100 566 (MARDON WRAPPINGS) 6 January 1983 see the whole document ---</td> <td style="text-align: center; vertical-align: top; padding: 5px;">1,4</td> </tr> </table>			Category ⁹	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³	Y	EP,A,0 176 134 (VAN GORKOM) 2 April 1986 cited in the application see abstract; figure 1 ---	1,7	Y	DE,A,2 734 357 (SKAIFE) 8 February 1979 see page 18, paragraph 2 -paragraph 3; figures 15,16 ---	1,7	A	CH,A,261 559 (WEBER) 16 August 1949 see page 2, line 32 - line 89; figures 1-4 ---	1,3	A	GB,A,2 100 566 (MARDON WRAPPINGS) 6 January 1983 see the whole document ---	1,4
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A	GB,A,2 100 566 (MARDON WRAPPINGS) 6 January 1983 see the whole document ---	1,4															
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>¹⁰ Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p> </div> </div>																	
IV. CERTIFICATION <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black; padding: 5px;">Date of the Actual Completion of the International Search</td> <td style="width: 50%; border-bottom: 1px solid black; padding: 5px;">Date of Mailing of this International Search Report</td> </tr> <tr> <td style="text-align: center; padding: 5px;">06 MAY 1992</td> <td style="text-align: center; padding: 5px;">23. 06. 92</td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 5px;">International Searching Authority</td> <td style="border-bottom: 1px solid black; padding: 5px;">Signature of Authorized Officer</td> </tr> <tr> <td style="text-align: center; padding: 5px;">EUROPEAN PATENT OFFICE</td> <td style="text-align: center; padding: 5px;">HERYGERS J.J. </td> </tr> </table>			Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report	06 MAY 1992	23. 06. 92	International Searching Authority	Signature of Authorized Officer	EUROPEAN PATENT OFFICE	HERYGERS J.J.							
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ANNEX TO THE INTERNATIONAL SEARCH REPORT
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0176134	02-04-86	NL-A- 8402816	01-04-86
DE-A-2734357	08-02-79	None	
CH-A-261559		None	
GB-A-2100566	06-01-83	NL-A- 8202422	17-01-83